



Roadmap for Adapting to Coastal Risk Training

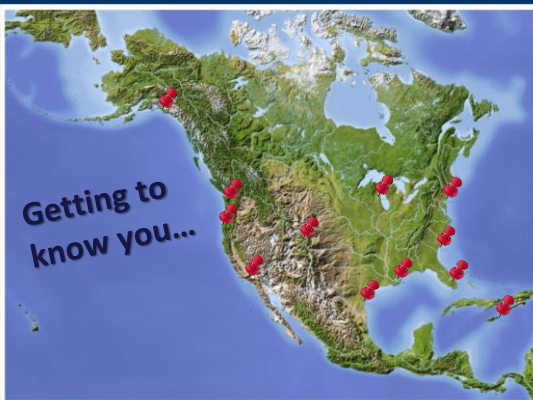
Getting to know us . . .



Lauren



David

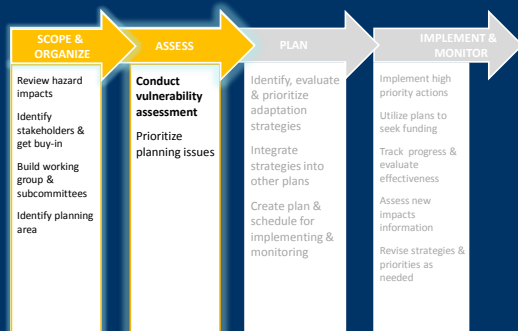


Where are we headed today?

- A vulnerability assessment framework
- Resources for filling your toolbox
- Ideas for risk-wise strategies



Planning Process



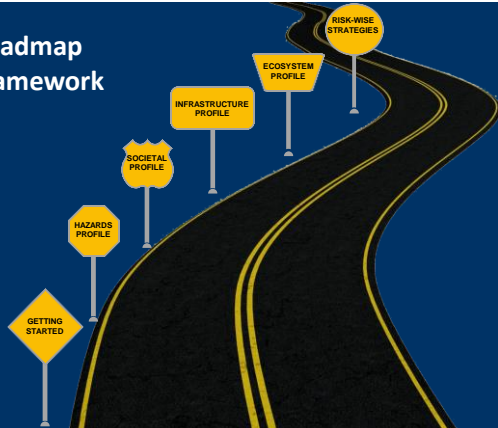
A vulnerability assessment identifies and prioritizes a community's



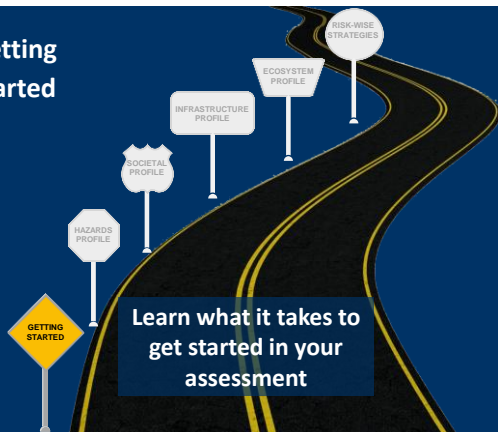
What the heck is the Roadmap?



Roadmap Framework



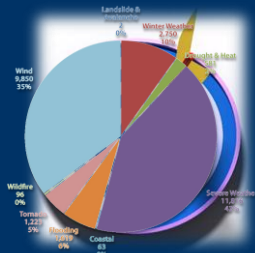
Getting Started



Identify your target

What are you really trying to accomplish with your vulnerability assessment?

And how can hazards data and information help you?



Consider existing community problems

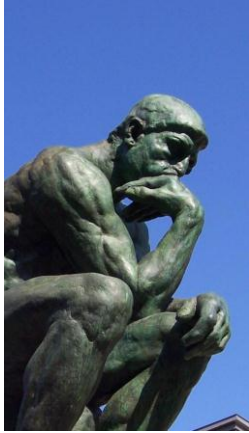
- Water availability and quality
- Growth management in high-risk areas
- Stormwater runoff and management
- Others?



Put a hazards and climate lens on planning activities

- Land Use
- Transportation
- Natural Resources
- Capital Improvements





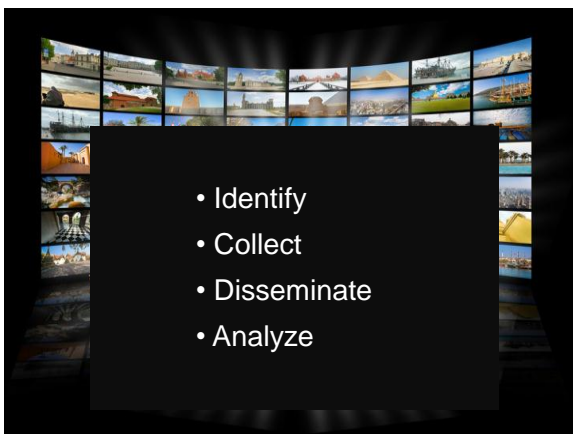
What do you think?

How can impacts from hazards or climate change exacerbate local planning issues in your community?

How much effort is this going to take?

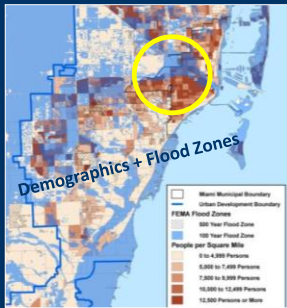
Consider your current capabilities and resources





- Identify
- Collect
- Disseminate
- Analyze

Use maps to
show connections and identify priorities



Context is critical too!



Information
doesn't provide
solutions –

People do!



Work collaboratively across sectors



Consider People who make key decisions

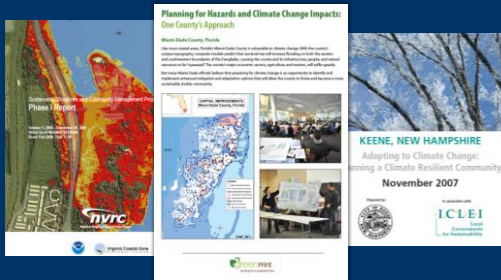


Tools and Resources



Resources to help you get
started in your
assessment

Vulnerability assessments...You're not the first



Who do I include?

Stakeholder Group	Notes
Local Safety	
Emergency planning officials	
Emergency management officials	
Emergency responders	
Emergency	
Emergency planning and preparedness officials	
Emergency management officials	
Emergency responders	
Planning and zoning	
Planning and zoning officials	
Planning and zoning officials	
Planning and zoning officials	
Community and economic development	
Community and economic development officials	
Community and economic development officials	
Community and economic development officials	
Education	
Education officials	
Education officials	
Education officials	

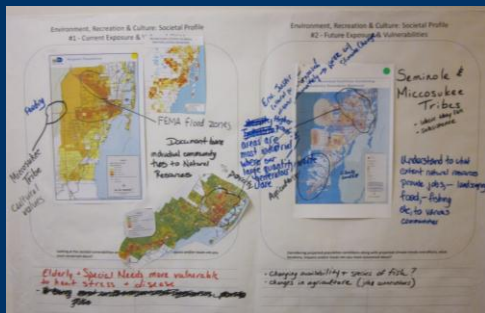
How do I engage them?

What data do I need?

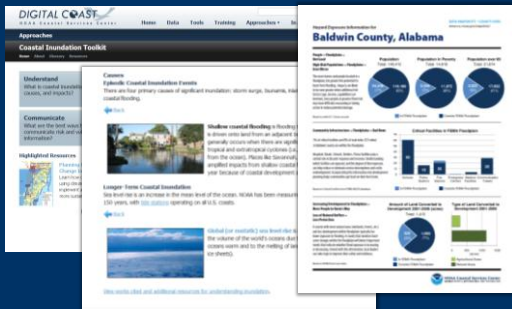
Hazard Layers	Details (source, location, code, date, network, etc.)
Flood zones	
Sea level rise	
Storm surge	
Wind speed	
Wave height	
Coastal erosion	
Other hazards	

Local Data	Details (source, location, code, date, network, etc.)
Boundaries	
County	
City	
Neighborhood	
Critical Facilities	
For your community, what is the most critical facility?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Emergency shelter	
Other critical facilities	

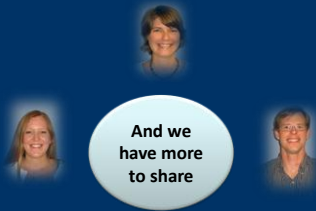
Stakeholder participation through "Storyboarding"



Resources to help you talk about hazards



Wait! I have more questions...



Where to find the resources...




www.csc.noaa.gov/roadmap







Find stories (examples, anecdotes, and photos) to supplement other data sources

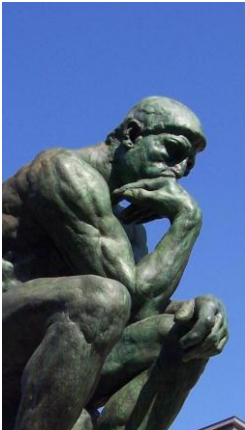


Consider hazard impacts on a full range of operations

Public safety	Water quality
Public health	Water availability
Infrastructure	Energy
Transportation	Social services
Land use planning	Agriculture
Coastal permitting	Port operations
Development standards	Tourism & recreation
Public works	Insurance availability
Economic development	Public housing
Building codes	Natural resources
Engineering	Education



Local Hazards



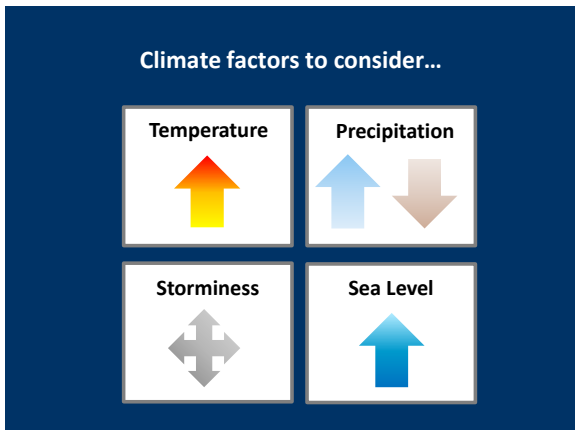
What hazard impacts have you experienced in your community?

It's Movie Time!



1. Mute your phone *6
2. Turn on your speakers





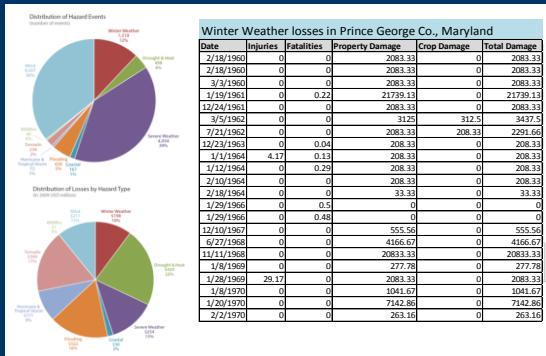


Tools and Resources



Tools and resources for
assessing hazard risks

Spatial Hazard Events and Losses Database for the US (SHELDUS)

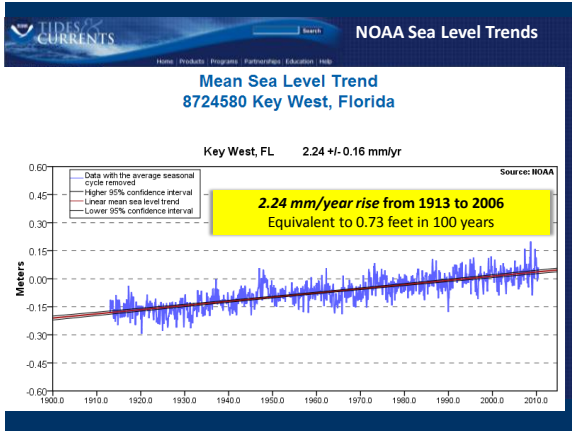


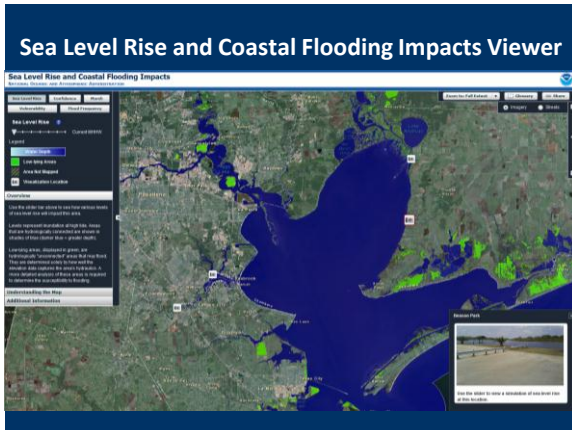


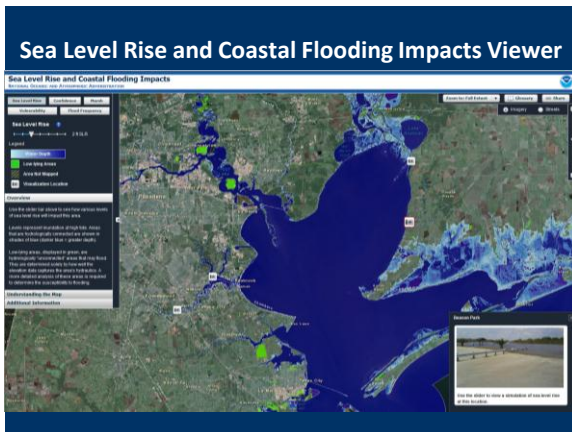
Digital Flood Data

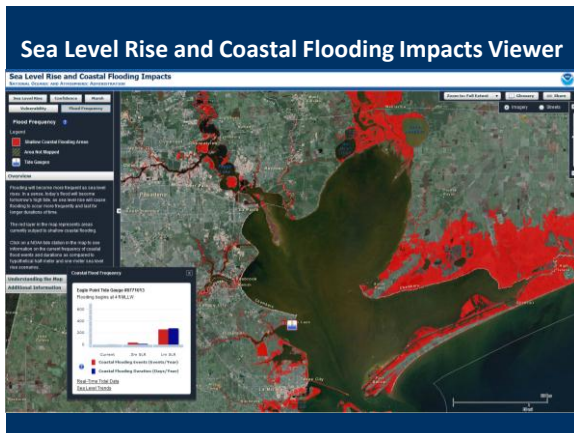
Available through

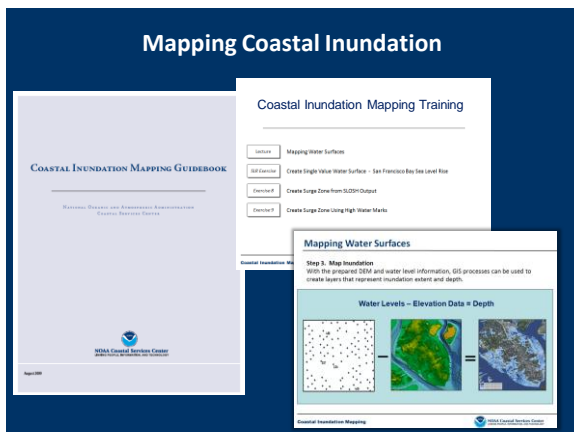
- FEMA website
- Local floodplain manager
- Emergency management or GIS departments

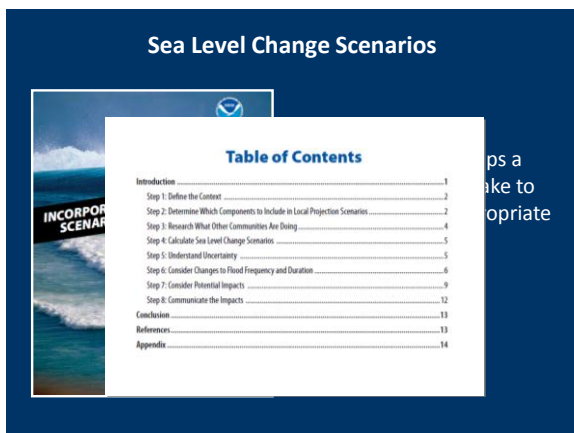












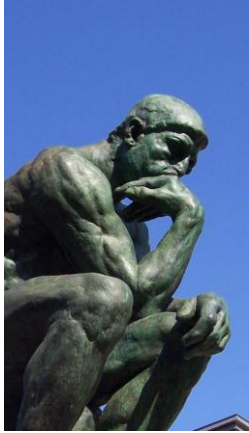


Consider potential social vulnerability factors

- Poverty and resources
- Elderly populations
- Children
- Health and disabilities
- Transportation access
- Exposure in high hazard areas

Consider community resilience factors

- Community engagement
- Cultural cohesion
- Social networks
- Sense of place
- Community identity



Societal Vulnerability and Resilience Factors

What are some specific factors of vulnerability or resilience that exist within your community?

Consider the effects of current and projected trends on vulnerability and resilience

- Language and culture
- Aging populations
- Economic conditions
- Family structure
- Community structure



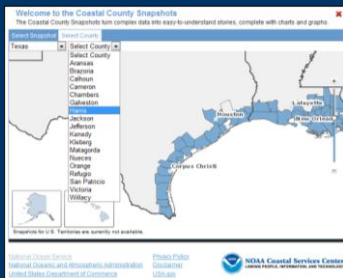
Tools and Resources



Resources to help assess societal vulnerability

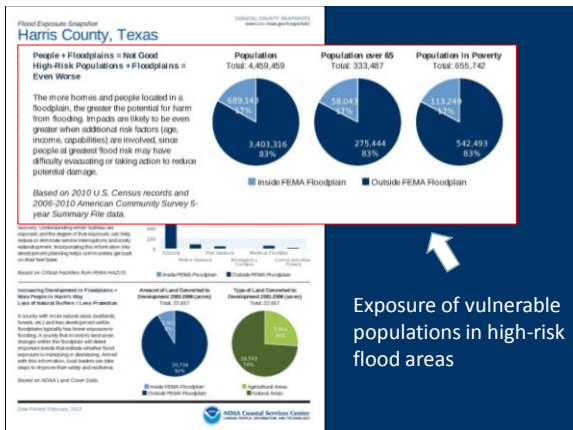
Flood Exposure Snapshot

Quick look at county-level exposure in flood zone

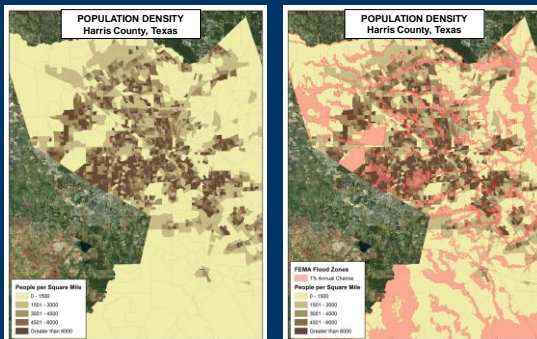


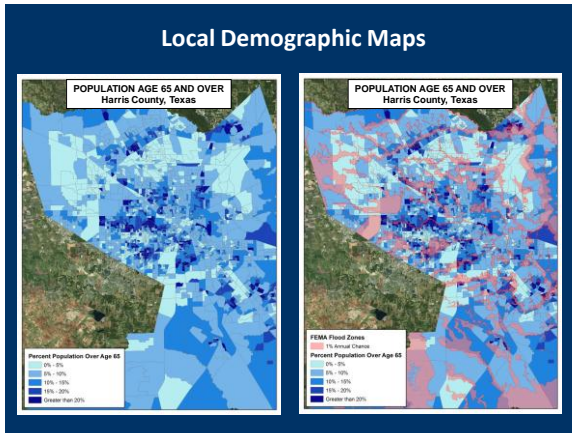
From Digital Coast Inundation Toolkit

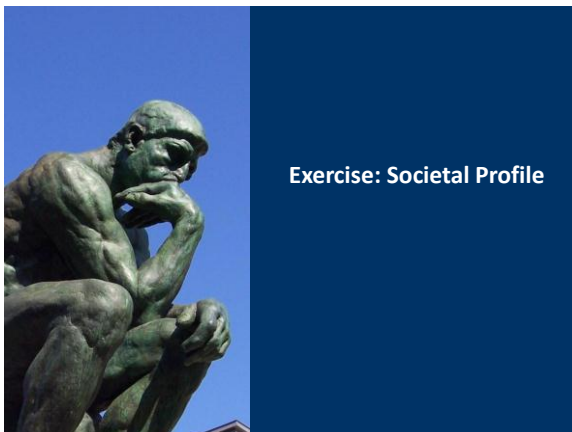
- Includes demographics, infrastructure, and environment
- Based on national data sets
- Printable reports

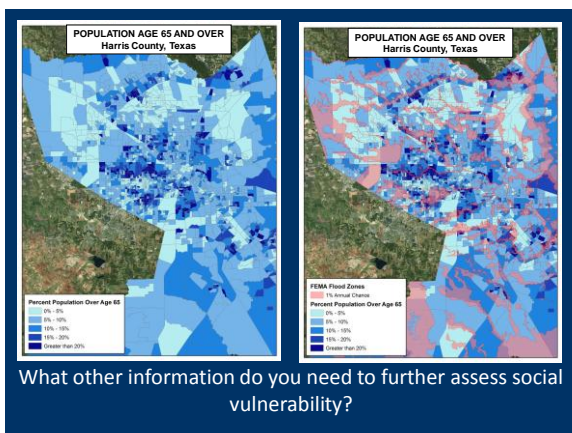


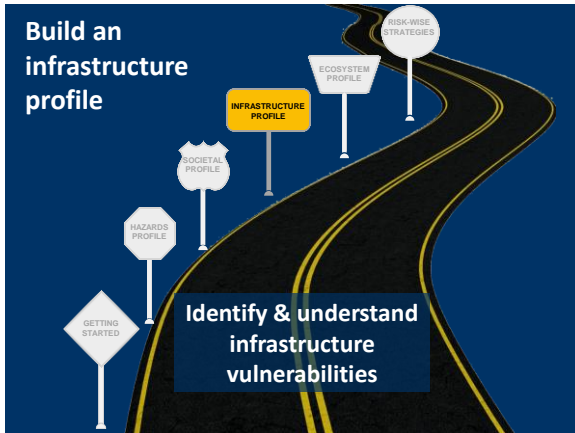
Local Demographic Maps

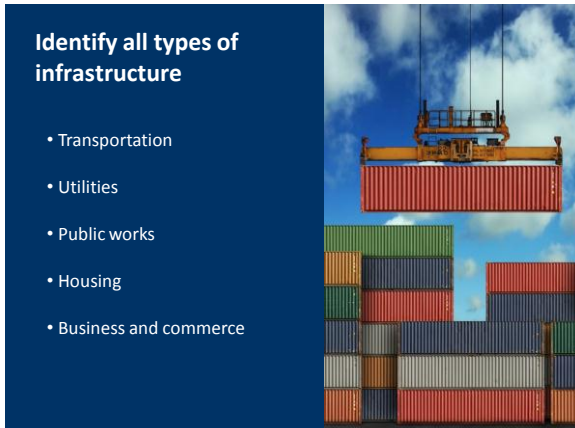


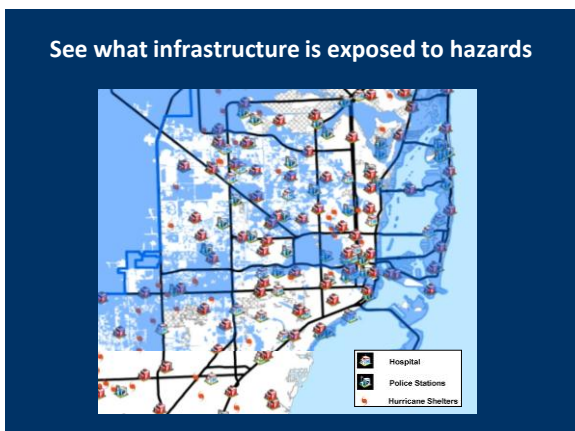












Assess factors that can contribute to vulnerability

- Construction codes and practices
- Age and condition
- Susceptibility to damages
- Criticality of function



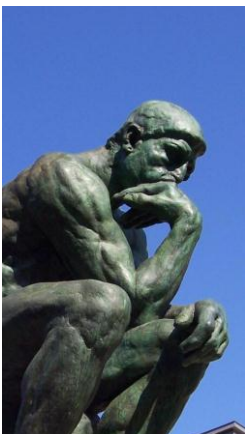
Assess current policies. Are they increasing vulnerability?

- Economic drivers
- Planning and decision-making processes
- Development standards
- Incentives and disincentives for growth in high hazard areas



Infrastructure Impacts

What are some examples of specific hazard impacts to infrastructure in your community?



Tools and Resources

Resources to help assess infrastructure vulnerability

Are we growing safely?

Sample of Audit Questions

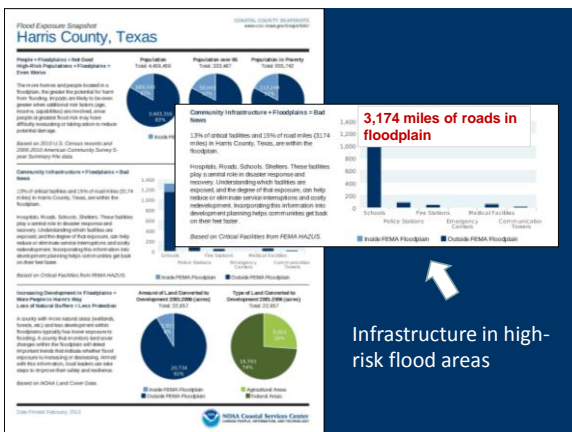
COMPREHENSIVE PLAN

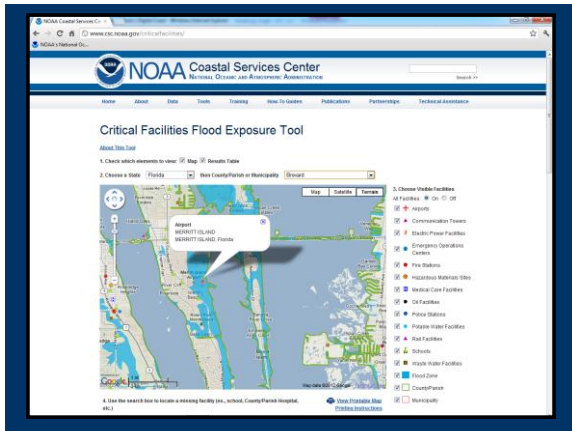
Land Use

- Does the future land-use map clearly identify natural hazard areas?
- Do the land-use policies discourage development or redevelopment within natural hazard areas?

Transportation

- Is transportation policy used to guide growth to safe locations?
- Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA Mitigation Plan?

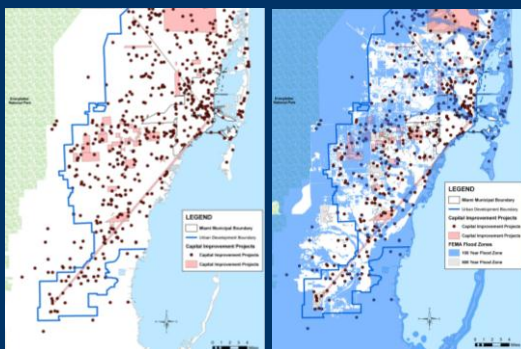




Infrastructure Spatial Data Suggestions

- Roads
- Utilities
- Public works
- Critical facilities
- Capital Improvements
- Stormwater systems
- Housing
- Commercial
- Land use (current; future)

dataChecklist.xls (Compatibility Mode)	
Critical Facilities	
1. Has your community utilized FEMA's HAZUS risk assessment?	
2. Emergency shelters	
3. Fire/EMS Stations*	
4. Police Stations*	
5. Hospitals*	
6. Municipal buildings*	
7. Schools*	
Critical Infrastructure	
8. Drinking water sources*	
9. Water intakes	
10. Water treatment plants	
11. Pump Stations	
12. Landfill/Waste Facilities	
13. Solid Waste Facilities	
14. Power plants	
15. Electrical Grid	
16. Gas and Petroleum Pipelines	



Capital improvements

Capital improvements + flood data

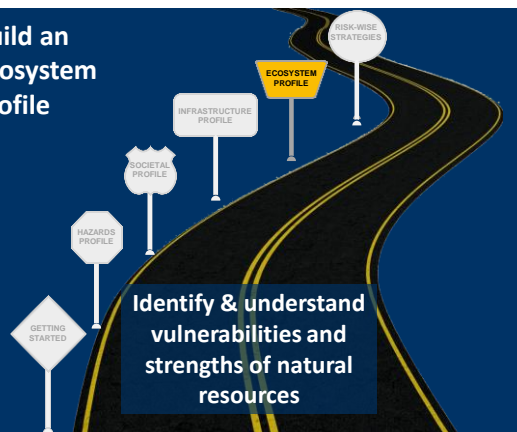
Estimate property losses and damages

County	Structure Damage	Contents Damage	Inventory Damage	Total Property Damage	Total Percent Loss Due to Wind Damage
Collier	33	8	0	41	0.10%
Glades	185	80	0	265	42.60%
Hendry	500	245	3	748	35.40%
Lee	102	13	0	115	0.20%
Martin	529	180	3	712	4.70%
Miami-Dade	80,608	45,104	848	126,560	63.90%
Monroe	11	1	0	12	0.10%
Okeechobee	460	210	2	673	28.50%
Palm Beach	63,019	33,152	371	96,543	72.00%
Total	233,452	126,881	1,064	362,297	59.10%

Infrastructure Profile

What are some ideas for improving infrastructure resilience?

Build an ecosystem profile





Video 2 – Greenseams

Make sure your phone is muted (*6)

Adjust your computer volume, if necessary.

Watch this video and think about how this story might relate to your community.

Consider the protective functions of key natural resources

- Storm buffering
- Flood protection
- Stormwater management
- Erosion control
- Climate regulation



Consider additional benefits of key natural resources

- Clean air and water
- Healthy fisheries and wildlife habitat
- Recreation and tourism opportunities
- Sense of place



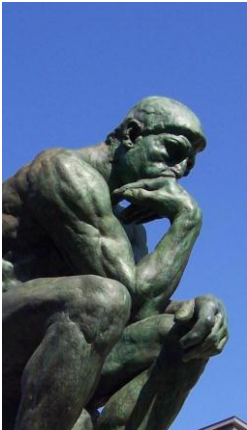
Consider potential stressors to key natural resources

- Development patterns
- Unsustainable uses
- Pollution
- Hazardous materials



Ecosystem Stressors

What are some specific examples of stressors affecting key natural resources in your area?

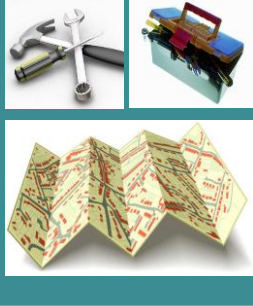


Consider current policies affects on the future vulnerability of natural resources

- Continued development in floodplain
- Site specific planning
- Altering the natural landscape



Tools and Resources



Resources to help
assess ecosystem
vulnerability

Conserving Coastal Wetlands Web Resource

Approaches

Conserving Coastal Wetlands for Sea Level Rise Adaptation

Home Resources

<p>Understand</p> <p>Why are coastal wetlands valuable for coping with sea level rise?</p>	<p>Identify</p> <p>What spatial techniques help identify coastal resource strengths and vulnerabilities?</p>	<p>Prioritize</p> <p>What spatial data, tools, and techniques can help prioritize existing or potential future wetland areas for protection?</p>
<p>Engage</p> <p>How can you build stakeholder support for your strategies?</p>	<p>Discover</p> <p>How are others prioritizing conservation efforts to account for and cope with sea level rise?</p>	

About This Site

The Digital Coast resource provides spatial techniques, resources, and examples to help communities identify coastal wetland and other vulnerabilities in the face of sea level rise—and to prioritize wetland conservation efforts that incorporate sea level rise considerations.

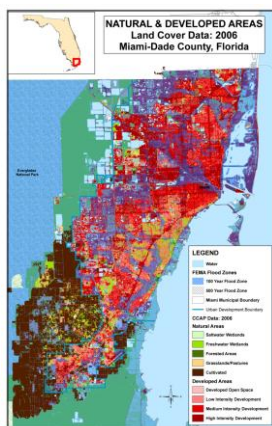
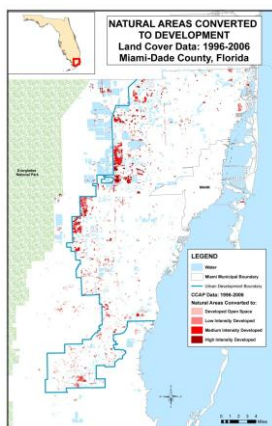
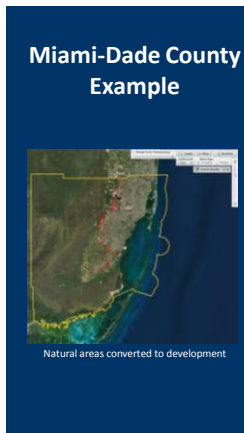
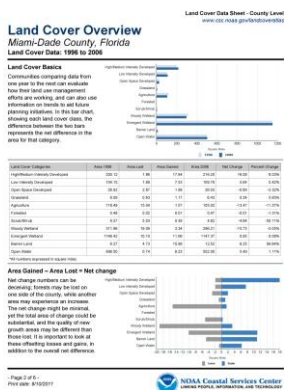
C-CAP Land Cover Atlas

Land cover and land change information for coastal regions



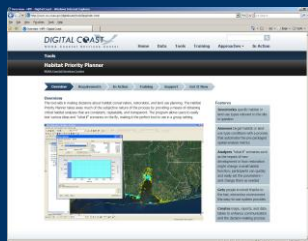
Available through
the Digital Coast

- Provides useful county-level summaries
- Data are available for download and use in GIS
- Produces printable PDF reports



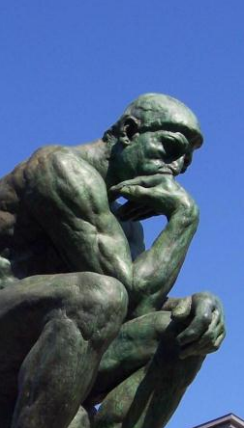
Habitat Priority Planner

- Identify land use and conservation priority areas
- Display and change scenarios on the fly with stakeholders
- "See" potential impacts of their ideas via maps, reports, and data tables



Technical assistance and online training available!

[illegible]



Exercise: Ecosystem Profile

What natural resources would you conserve to support resilience to hazards and climate change?



Risk-Wise What?

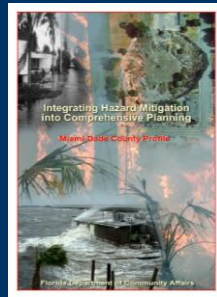
Ways to increase your ability to be flexible and adaptable to change



Consider what's already
being done to build
resilience



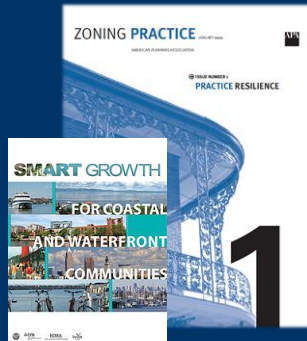
Consider hazard
mitigation in your
other plans



Consider the
cumulative impacts
of your decisions



Consider alternative
ways to build



Consider how
nature's resources
can help lessen
impacts



Taking those first steps



One last thing



PLEASE fill out the Evaluation

Questions & Discussion

Call or e-mail us – *Really!*



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